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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A peptide which comprises:
 - (a) the sequence shown in SEQ ID NO:1; or
 - 5 (b) the amino acid sequences:
His⁷³⁶GlyTrpSerTyrGlyGlyTyrLeu;
Leu⁸¹⁶AspGluAsnValHisPheAlaHis; Glu⁸⁴⁷ArgHisSerIleArg and
Phe²⁵⁵ValLeuGlnGluGluPhe, and which has the substrate
specificity of the sequence shown in SEQ ID NO:1; or
 - 10 (c) the sequence which has at least 60% identity
with the sequence shown in SEQ ID NO:1, and which has the
substrate specificity of the sequence shown in SEQ ID
NO:1.
- 15 2. A peptide according to claim 1 (c), wherein the
amino acid identity is at least 75%.
3. A peptide according to claim 1 (c) wherein the
amino acid identity is at least 95%.
- 20 4. A fragment of the sequence shown in SEQ ID NO:1
which has the substrate specificity of the sequence shown
in SEQ ID NO:1.
- 25 5. A fragment according to claim 4 which consists
of the sequence shown in SEQ ID NO.s: 3, 5 or 7.
6. A peptide according to claim 1, wherein an
asparagine residue in the peptide is not linked to a
30 carbohydrate molecule.
7. A peptide according to claim 1, wherein the
peptide is not expressed on the cell surface membrane of a
cell.

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8. A fusion protein comprising the amino acid sequence shown in SEQ ID NO:1 linked with a further amino acid sequence, the fusion protein having the substrate specificity of the sequence shown in SEQ ID NO:1.

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9. A fusion protein according to claim 8 wherein the further amino acid sequence is selected from the group consisting of GST, V5 epitope and His tag.

10 10. A method of identifying a molecule capable of inhibiting cleavage of a substrate by DPP8 comprising the following steps:

- (a) contacting DPP8 with the molecule;
- (b) contacting DPP8 of step (a) with a substrate
- 15 capable of being cleaved by DPP8, in conditions sufficient for cleavage of the substrate by DPP8; and
- (c) detecting substrate not cleaved by DPP8, to identify that the molecule is capable of inhibiting cleavage of the substrate by DPP8.

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11. A method of identifying a molecule capable of inhibiting specifically, the cleavage of a substrate by DPP8, the method comprising the following steps:

- (a) contacting DPP8 and a further protease with the
- 25 molecule;
- (b) contacting DPP8 and the further protease of step (a) with a substrate capable of being cleaved by DPP8 and the further protease, in conditions sufficient for cleavage of the substrate by DPP8 and the further
- 30 protease; and
- (c) detecting substrate not cleaved by DPP8, but cleaved by the further protease, to identify that the molecule is capable of inhibiting specifically, the cleavage of the substrate by DPP8.

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12. A method of reducing or inhibiting the catalytic activity of DPP8, the method comprising the step of contacting DPP8 with an inhibitor of DPP8 catalytic activity.

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13. A method of cleaving a substrate comprising the step of contacting the substrate with DPP8 in conditions sufficient for cleavage of the substrate by DPP8.

10 14. A method of detecting an activated T cell, the method comprising the step of measuring the level of DPP8 gene expression in a T cell.

15 15. A method according to claim 14, wherein the level of DPP8 gene expression is detected by detecting the amount of DPP8 RNA in the cell.

16. A nucleic acid molecule which:
(a) encodes the sequence shown in SEQ ID NO:1; or
20 (b) consists of the sequence shown in SEQ ID NO:2; or
(c) is capable of hybridizing to a nucleic acid molecule consisting of the sequence shown in SEQ ID NO:2 in stringent conditions, and which encodes a peptide which has the substrate specificity of the sequence shown in SEQ
25 ID NO:1.

17. A nucleic acid molecule according to claim 16 (c) wherein the molecule is capable of hybridising in high stringent conditions.

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18. A nucleic acid molecule according to claim 16 which is capable of hybridising to a gene which is located at band q 22 on human chromosome 15.

35 19. A nucleic acid molecule according to claim 16

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which does not contain 5' or 3' untranslated regions.

20. A fragment of a nucleic acid molecule
consisting of the sequence shown in SEQ ID NO:2, which
5 encodes a peptide which has the substrate specificity of
the sequence shown in SEQ ID NO:1.

21. A fragment according to claim 20 which consists
of the sequence shown in any one of SEQ ID NO.s: 4, 6 or
10 8.

22. A vector comprising a nucleic acid molecule
according to claim 16.

15 23. A cell comprising a vector according to claim
22.

24. A composition comprising a peptide according to
claim 1.
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25. An antibody which is capable of binding to a
peptide according to claim 1.

26. An antibody according to claim 25 which is
25 produced by a hybridoma cell.

27. A hybridoma cell capable of making an antibody
according to claim 26.